

a plurality of optical and electronic components mounted in the housing and including:

at least one transmitter for transmitting an electromagnetic wave, and  
at least one receiver for receiving the electromagnetic wave, the  
measuring distance influencing a wave propagation between the at least one transmitter  
and the at least one receiver such that when a coating forms on the windshield, an output  
signal sensed by the at least one receiver is changed.

21. (New) The rain sensor according to claim 20, wherein the rain sensor is used in a motor vehicle.

22. (New) The rain sensor according to claim 20, wherein the coating is a result of wetting by precipitation.

23. (New) The rain sensor according to claim 20, wherein:  
the light conducting element forms a base plate of the housing and includes  
a broad area of connection with the windshield.

24. (New) The rain sensor according to claim 23, further comprising:  
a common printed board on which is mounted the plurality of optical and  
electronic components in accordance with SMD technology.

25. (New) The rain sensor according to claim 24, further comprising:  
an integrated connector for an electrical connection to a downstream analysis unit,  
wherein:

the housing corresponds to a rectangular-shaped sensor housing.

26. (New) The rain sensor according to claim 25, further comprising:  
contact pins through which the printed circuit board is connected to the integrated  
connector.

27. (New) The rain sensor according to claim 20, wherein:  
the rain sensor is cemented to an inside of the windshield.

28. (New) The rain sensor according to claim 27, further comprising:  
a transparent film that is self-adhesive on each side thereof and corresponds to a connection between the windshield and the light conducting element.
29. (New) The rain sensor according to claim 20, wherein:  
the output signal is provided to a downstream analysis circuit and includes information with respect to an instantaneous degree of wetting of the windshield.
30. (New) The rain sensor according to claim 29, wherein:  
at least one of a windshield wiper mechanism and a vehicle lighting system is activated as a function of the output signal.
31. (New) The rain sensor according to claim 20, wherein:  
the at least one transmitter includes at least one LED.
32. (New) The rain sensor according to claim 31, wherein:  
a first one of the at least one receiver that detects an optical signal emitted by the at least one LED includes a photodiode.
33. (New) The rain sensor according to claim 20, wherein:  
the at least one receiver includes at least one ambient light sensor.
34. (New) The rain sensor according to claim 33, wherein:  
the at least one ambient light sensor includes an aperture angle of approximately 40° inclined upward with an aperture direction in a direction of travel.
35. (New) The rain sensor according to claim 34, wherein:  
the at least one ambient light sensor is sensitive to an ultraviolet light.
36. (New) The rain sensor according to claim 35, wherein:  
the ultraviolet light corresponds to sunlight.

37. (New) The rain sensor according to claim 20, wherein:  
if an infrared light is used, the light conducting element is formed of a black plastic.
38. (New) The rain sensor according to claim 20, wherein:  
the light conducting element includes optical areas formed from transparent plastic for the at least one receiver.
39. (New) The rain sensor according to claim 20, wherein:  
the light conducting element includes a plastic part formed according to a two-color injection molding process.
40. (New) The rain sensor according claim 20, wherein:  
the light conducting element is formed by combining two single-color plastics.
41. (New) The rain sensor according to claim 20, wherein:  
the light conducting element includes integrated lens structures for light bundling.

**IN THE ABSTRACT:**

On page 10, delete the Abstract and insert in its place:

**--Abstract Of The Disclosure**

A rain sensor, for motor vehicles in particular, having one measuring distance with at least one transmitter and at least one receiver for electromagnetic waves (light waves), a windshield being arranged in the measuring distance, and the measuring distance influencing the wave propagation between the at least one transmitter and the at least one receiver in such a way that when a coating forms on the windshield, in particular as the result of wetting by precipitation, an output signal sensed by the receiver is changed. It is provided that the optical and electronic components of the rain sensor are mounted in a housing, a light conducting element forming a cover of the housing.--.